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A mandate for local people's voice

Socio-cultural considerations for conservation policies in Madagascar

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Abstract

Madagascar is well-known for its natural uniqueness but at the same time faces a tremendous habitat loss because of anthropogenic threats. As global initiative governments are encouraged to nominate protected areas in order to either stop or reduce biodiversity loss. While decisions on conservation activities are mainly based on epistemic grounds, the role of local people and their socio-cultural context in its complexity remains to be left out. Although conservation organizations demonstrate their willingness to cooperate with local people, cultural discrepancies are still too vast and yet inhibit a well-balanced and constructive collaboration.

In a social science study using participatory rural appraisal and semi-structured interviews in two biosphere reserves in the north of Madagascar we collected qualitative data from local people, local authorities and biosphere reserve management.

The aim is (1) to contrast local value perceptions with western epistemic based understanding of forest resources and (2) to elaborate on local social institutions (organization) in the two Malagasy biosphere reserves. Results show on the one hand that by far not only provisioning services are conveyed as could have been expected, but also values that can be assigned to one of the three other categories: regulating, cultural or supporting services. On the other hand local people support a grouping in thematic associations, which foster their recognition and potential social movements towards collectively defined goals in the conservation debate. These facts encourage dialogue between apparently differing positions on forest ecosystems that provide services to both the local and the global community.

Keywords: conservation policy, dialogue, ecosystem services, forest value perception, Madagascar, protected areas

Content

1 Introduction

A thing is right when it tends to preserve
the integrity, stability, and beauty
of the biotic community.
It is wrong when it tends otherwise.

(Leopold, 2003)

1.1 Context

One of today's answers to global biodiversity loss is the nomination of protected areas and biosphere reserves meant to allow for human well-being in the long run. Especially in developing countries like Madagascar that are bestowed with a high biological diversity this is of major importance and thus has been high on the political agenda in recent years.

These answers are driven by discourses on concepts for nature conservation and sustainable development. Sustainability, which is fundamental to these concepts, is used in various fields to demonstrate the long-standing character of an entity, for example that projects in development aid and their contribution carry on after completion (Ostrom et al., 1993). Environmental considerations, the ever growing discrepancy between North and South[1] and the recognition of finite natural resources let the sustainability debate move to the top of global concerns. It is thought that global environmental change is only solvable at highest political levels. The idea is to integrate conceptually conservation and development efforts, which was then called sustainable development (Daly, 1991). Economic growth is considered as model to resolve the discrepancy between environmental destruction and poverty alleviation (Ott and Döring, 2004). However, the question does not only remain within the scope of intragenerational distribution of assets but also moves on to future generations and what is left to them. In this respect "sustainability means that present and future persons have the same right to find, on the average, equal opportunities for realizing their concepts of good human life." (Ott, 2003a: 60).

Nature as it occurs around us is of intrinsic value, but also underpins economy and society by its capacity to provide resources to meet human needs. The challenges lie in the way how

[1] North and South are referred to as industrialized and non-industrialized countries respectively, western and non-western worldviews respectively or First and Third World as it has been the expression before fall down of the iron curtain.

people use their environment and in what kind of relation they are with nature. Hence, drivers are on the one hand the caring for nature on the other hand the sought to allow for a good life of people living on this Earth. It is essential to understand the reality of this world, and the environmental, economic and political factors that create it and are thus central of the widespread contemporary concern for conservation and a development that is sustainable.

Being confronted with a clear separation between human being and non-human beings it is sought to redefine the relationship between human civilization and the natural environment, where environmental ethics emerges. It studies natural values and the associated moral relationship of human beings to the environment and thereby offers principles and behavioral rules (Brennan and Lo, 2009). However, regulation is not the only motivation, in fact environmental ethics needs to inspire environmental moral sensibility what Aldo Leopold calls an "ecological conscience" (Leopold, 2003). Leopold (2003) phrases it as follows: "Obligations have no meaning without conscience, and the problem we face is the extension of the social conscience from people to land." (ibid: 41) Global industrialized civilization, technological development and science have a power that eclipses the sense of the spirit of nature and its mystics, uncontrollable and fearsome (Brennan and Lo, 2009) and consequently removes the human being from the spiritual connection to the environment. One role of (environmental) philosophy is to restore lost sight (Rawles, 1998) and thus to return to values of spontaneity and creativity that are part of your inner self and brings us back to a sense of responsibility towards nature and its human and non-human inhabitants.

Due to its natural richness and a high degree of anthropological threats Madagascar is in the center of concern, while it has to be recognized that the socio-cultural background is different to western cultures. Consequently western introduced concepts such as protected areas with boundaries defined according to ecological judgment are prone to fail because local structures and rules are often insufficiently represented. Although development organizations try to refine programs constantly according to what they identify as local requirements, oftentimes implementation is unsatisfactory or development measures show only short-term results and die off with the end of a project. One reason is the huge gap between the western way of scientific understanding (born in the North) and traditional local knowledge based on belief systems and shaped by socio-culture. For example in Madagascar people's attitude is oriented towards ancestors and their well-being. If ancestors are content there will be enough food and healthy offspring. A kin's successful growth depends on the provision of land, since land

means life not only for subsistence purpose but for enabling the process of continuation and growth (Keller, 2009). Hence, the possession of land is directly connected to growth and well-being. If the nomination of protected areas constrains this cultural identity, people might feel to be at government's or conservation organization's command and oppose those activities. Malagasy culture is strongly influenced by a close relation with nature and can be seen as complex interdependence that is difficult to disentangle in its individual parts. Nature conservation might not be the prime objective as driver for decisions in interaction with nature, but forms an inherent part of Malagasy belief systems and cultural understanding. In contrast scientific ecological knowledge is primarily used to determine park boundaries. This knowledge has grown from disentangled view on natural parts rather than considering the system in its complexity. The common practice is to dismantle ecosystems for a precise understanding of individual processes in order to determine for instance endangered species that need to be conserved.

1.2 Objective of the study

In this paper it is sought to identify similarities and discrepancies between value standards that hold natural entities formulated in western environmental ethics (i.e. non-economic values) and perceived values in non-western cultures. Community-based natural resource management practices are contrasted with customary land use practices in order to motivate better integrated concepts for an effective implementation of biosphere reserves and a sustainable development in Madagascar.

Main questions are:

1. What is the role of natural values according to environmental ethics?
2. What are Malagasy value identities of nature and in particular of forests?
3. Which socio-cultural aspects are prevalent in Madagascar?
4. How do integrated conservation and sustainable development concepts look like, in this case the concept of biosphere reserves and community-based natural resource management?
5. What are potential bridges to overcome the highlighted gaps between western integrative concepts and socio-cultural considerations?

Conservation and development are earmarked by two cultures, which have often remained remote from each other both conceptually and practically. So far, environmental and

sustainability policy has been following the distinct dimensions of on the one hand protection of ecology, habitat, biodiversity and wilderness; control of pollution to improve air and water quality; conservation of renewable and non-renewable resources and on the other hand economic growth. Human well-being is the foremost objective, which is defined by means of capabilities that are necessary for a flourishing life.

Nevertheless, cultural processes within communities can render implementation of policies difficult or even impossible. Especially, mainstream sustainable development that evolved on the global scale is far from local conditions and therefore often doomed to failure. We argue that it is necessary to open up for different approaches to sustainable development and the implementation of biosphere reserves including insights from traditional cultures in developing countries that have yet not expanded into the global agenda.

In order to do so we introduce the global discourse on sustainable development and then turn to philosophical considerations. Natural values as conceptionalized in environmental ethics are presented and contrasted with rural Malagasy peoples' perception on forest values and local social organization and institutions. Based on these insights we present integrative conservation and sustainable development approaches that are implemented in Madagascar. We conclude with some reflections on ways how to integrate local perspectives into the global agenda.

1.3 Methodology

In this paper we ground the discussion on detailed literature reviews and empirical evidence from the local level in Madagascar by means of a case study. Socio-cultural characteristics of rural people from the Northeast and Northwest were investigated during altogether six researcher-months of fieldwork in both Mananara-Nord and Sahamalaza Iles-Radama Biosphere Reserve. Semi-structured interviews were conducted along with Participatory Rural Appraisal (PRA), where normally a group of three to five people discuss on a given topic and draw or write their impressions and opinions on a map, without being influenced by the researcher (ASIA, 2002; Kumar, 2002). Fieldwork in forest villages was supplemented by key stakeholder interviews with protected areas experts, conservation NGO employees at local, regional and national levels and government employees. This qualitative approach allows for deep insights into local conditions and complex structures that have an influence on the interaction between humans and forests. The approach is based on various qualitative methods

(interviews, participatory rural appraisal (PRA) and observations) and different sites in Madagascar to guarantee for a plurality of perspectives on the given topic for data validation by means of triangulation (Flick, 1995; Flick, 2008). The purpose is to allow for new concepts and depict interrelations between stakeholders based on a theoretical contemplation of the dichotomy between western and non-western worldviews and relevant data to portray the situation at the local level and integrate very practical considerations.

2 Sustainable development

Life is always a balancing
of value gain and value loss.

(Rolston III, 2003)

In the 1980s new concepts of sustainability emerged with respect to our planet Earth and considerations about its long-lasting contribution to human well-being or the other way around the feared loss of its capacity to carry the accelerating growth of human population and its development. In order to provide a brief insight into the development process of sustainability and the therewith connected approach of sustainable development we start with the historical background from a mainstream (scientific) approach that mainly has been evolving in the 1980s and 90s to a humanistic approach "to achieve the person's concept of a good life".

Sensational industrial revolutions at the end of the 19th and at the beginning of 20th century showed their drastic consequences on the environment. In her book the "Silent Spring" Rachel Carson (1962) paved the way for an environmental movement of people who were concerned about future developments on Earth. Awareness about irreversible resource depletion and consequential scarcity of natural resources together with the denial of pesticides and other destructing technological innovations fostered the idea of the movement to implement wilderness protection and to stop economic growth. On the other hand population growth exponentially increasing amplified pressure on resources. The Club of Rome (a political think tank) became famous with its compilation on "The limits to growth" (Meadows et al., 1972) exploring the Neo-Malthusian idea of limiting population growth by birth control. The resulting recommendations are debatable but more importantly this inconvenient knowledge in combination with the new-born environmentalism opened-up the path to a global sensitization for a needed rethinking from pure economic growth considerations.

Particularly, the North (industrialized countries) in the process of civilization developed mechanisms that help to become independent of natural processes through for example industrial agriculture, long-distance trade, occupational specialization, and urbanism. Secularism, humanism, and materialism have changed the way of understanding and contemplating natural, cultural, ecological and social interrelations. Economic thinking evolved into pure economics, based on rational thinking and decision-making labeled as "homo oeconomicus" (Ott and Döring, 2004). Whereas the South (non-industrialized countries) has remained dependent on agriculture as main income source and subsistence economy, which is based on a different set of rules that organizes life, where the interrelation between human being and nature is dominant. Simultaneously, the divide between North and South kept increasing even fostered through various historical influences including colonialism, resource exploitation in Southern countries by the North and also political unrests in decolonized countries.

As answer to the still increasing gulf between First and Third World, former colonialists considered their concept of economic growth as answer out of poverty that needed to be implemented in the South as well and invested great sums to trigger comparable developments there. The reasoning was that in many cases emissions have declined with rising income, because environmental concern begins where other concerns as the struggle for life end. Local institutional reforms, such as environmental legislation and market-based incentives are implemented in order to reduce environmental impacts and thus considered as the resolution.

The idea is that this resolution can only be solved on the international level involving all concerned parties and through consolidating two issues: environment and development. Low and Gleeson (1998) summarize the underlying thought:

> Joining two positive sounding words seemed to resolve at a stroke the conflict between an economy based on everlasting growth and a planetary environment of permanent high quality. These goods, it was hoped, could be reconciled if only the economy could be organised around production activities which did not harm the environment. (Low and Gleeson, 1998: 12)

This constituted the vision of the 1980s and 90s of sustainable development (throughout various meetings, statements and publications (1) at the Stockholm Conference, (2) the following "World Conservation Strategy" offered by conservation organizations, (3) the

outcome of the established World Commission on Environment and Development and its report "Our common Future", (4) the revised version of the World Conservation Strategy called "Caring for the Earth" and finally (5) the outcome of the Agenda 21) evolved in a mainstream understanding on what is needed globally. This vision has been strongly influenced by science and in particular by ideas about wildlife conservation, by concerns about multilateral global economic relations, and by emphasis on the rational management of resources to maximize human welfare (Adams, 2001).

So far the debate on sustainability occurred largely at the scientific and political level as depicts the portrayal from above. However, within the academic discourse, not only science (such as biology, ecology, and economics) is in demand, but also considerations from humanities constitute the concept. While people and intra-/intergenerational justice are in the center of the sustainability debate, a just distribution of stocks within and between generations needs to be theoretically clarified (Ott and Döring, 2004). Paehlke (2005) rightly claims to recognize and capitalize the potential to reduce the gap (unbridgeable gulf) between the humanities and the sciences (Paehlke, 2005: 37). In this context he postulates a clear role allocation to natural, social science and humanities:

(1) natural sciences' dual role: to take care for ecological health and the redesign of the industrial society;
(2) social sciences' multifaceted role: to rethink public policy instruments and institutions as well as structures and rules of democracy;
(3) humanities should take a lead on the meaning of human well-being (Paehlke, 2005).

Such a clear cut classification is certainly not consistently tenable, but offers orientation. In the human world just distribution of stocks is closely interconnected with social processes (action, rules, institutions and also persons), which are in the Northern sphere measured by the means of norms and principles.

3 Natural Values

Valuing and knowing are not separate.
How we know nature and how we value,
or discount, nature are tightly linked.

(Norgaard, 2009: 44)

3.1 Instrumental and intrinsic values: Humanistic perspective on natural values

Environmental ethics has grown to a discipline in its own right. Discussions on natural capital and the inclusion of an ethical point of view in the economic valuation debate brought moral considerability of non-human natural entities on the agenda. The attempt is to provide theoretical grounds for the moral standing of non-human natural entities, natural communities, or nature as a whole (Callicott, 1984) and to understand the human relationship with the environment and thus to determine norms of action (Sandler, 2005). Nevertheless, moral theory concentrates on principles and concepts mainly driven by western thinkers and, therefore, involves their cultural identities. In order to allow for other origins of cultural identity "axiological analysis offers a larger field for a possible overlapping consensus with non-western and non-rationalist considerations that take into account traditional knowledge, indigenous views, and other forms of experience (aesthetic, spiritual and the like)" (Muraca, 2009).

Axiology addresses the basic question of underlying values independent of moral duties, norms and obligations. Through values humans either individually, in a group or society determine "what things are good, and how good they are" (Schröder, 2008: 1st paragraph). In doing so the fundamental idea is that *the entity* itself or *the relation* between entities holds a value. On the other hand there are commonly shared values such as freedom, peace, and shelter, fulfillment of "basic needs", health, a livable and decent environment and privacy. The list could obviously be extended by other universal values that are accepted by the majority of human cultures as normative understanding (Ott, 2003b). In many cases these universal values constitute the basis of human rights. Another group of value standards are only shared by similar cultural identities and are thus *prima facie* valid for members of that cultural group until amendment occurs due to e.g. cultural development or change. "Equality" is an example of a western value standard reflected in democratic processes. A person is

elected to fulfill for example political decision-making, whereas in other non-western cultures because of lineage a specific individual is chosen to do so.

Meanwhile, in environmental ethics both non-human entities and the relation between human and non-human entities are taken into consideration. The intent is to particularly understand the relationship between human and the environment and to determine human beliefs' and attitudes' underlying values that govern their interaction. As a matter of fact living beings aspire at values conducive to survival and enhancing quality of life; great parts of these vital values are provided by the environment. The environment not only provides for the fulfillment of utilities but is also, for example life-supporting, culturally meaningful and beautiful at the same time. In the case of forests Kates (1969) puts it in a nutshell: The forest is to be cleared for cultivation, logged for jobs and economic gain yet protected for watershed maintenance, aesthetic pleasure and quasi-religious reverence. Environmental ethicists have been concerned with the importance and attributes of these natural values, and how these contribute to their own and other living beings' basic and derivative needs (Hart, 1971). While presenting different viewpoints in the value debate, environmental ethicists emanate from two fundamental value categories:

(A) Instrumental value. From an anthropocentric perspective instrumental values describe attributes that are assigned to something because of its usefulness to human beings. If an object is used as a means to achieve or to satisfy a need, either the entity or the relation is classified as an instrumental value. Goods, services and information constitute an instrumental value, which are with respect to the environment for instance natural goods and ecosystems services. In this paper the mere instrumental value is considered as being substitutable, i.e. if a particular good is not available, the need can be fulfilled by the use of an equivalent.

(B) Non-instrumental or intrinsic value. Without question natural entities do not solely exist for the benefit of humans or others, but evolve in and are part of an ecological system. This ecological system does only exist due to its interrelated parts. And because of its interconnectedness the ecological system has the capability to grow and restore, i.e. to render life possible. Natural processes can be described as mean-end relations (the food chain is a very good example), however, all "mean-end relations" cease at a certain point, where an entity is "good-in-itself" or in other words intrinsically valuable.

O'Neill et al. (2008) present plausible classification of intrinsic values elucidated systematically in their book on "Environmental Values" (see Figure 1).

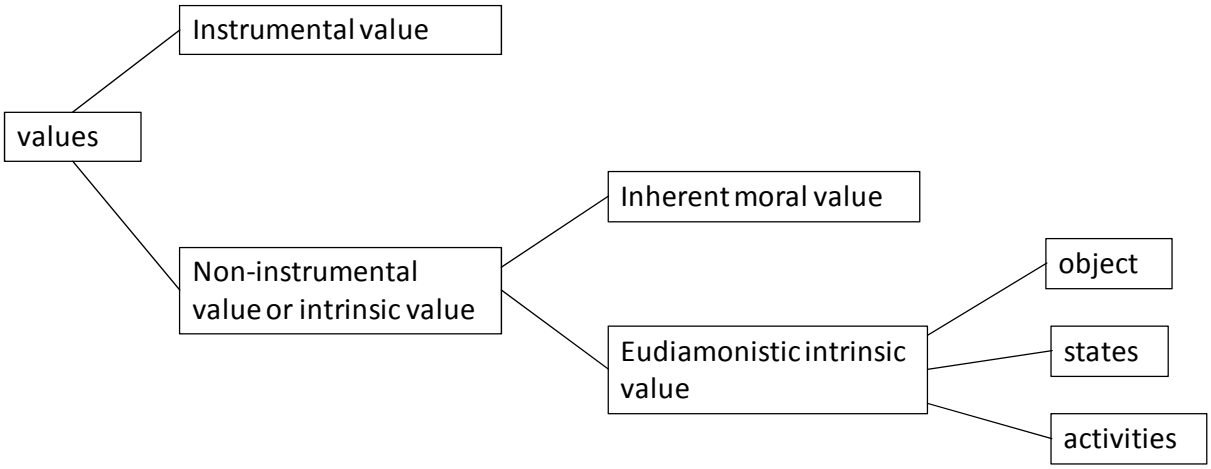

Figure 1 Illustration of value categories (interpreted and adapted from O'Neill et al. 2008)

In the context of non-instrumental value of nature there is a huge variety of scales from which values are considered. The category of *inherent moral value* is the acknowledgment of moral standing of an entity. In doing so the entity is considered in its own right and with it its moral accountability. The debate in environmental ethics is broadly carried out from a deontological point of view and supported by the objectivist perspective on intrinsic values. With respect to non-human entities one must ask whether the entity is part of the moral community and should, therefore, be morally taken into consideration for an ethical choice. These questions are reflected in the debate on the demarcation problem. The underlying contemplation is independent of preferences, but focused on ethical reasoning.

3.2 Ecosystem Services: Scientific perspective on natural values

Conservation biology as independent discipline evolved in the 1980s with the clear objective to highlight the importance of conserving natural entities by classifying biodiversity as inherently valuable (Soulé, 1985). Biodiversity is part of ecological complexes, i.e. ecosystems, which generate spontaneous order and envelop as well as produce the richness, beauty, integrity and dynamic stability of the component parts (Rolston III, 2003). Conservation biology has been proclaimed as crisis discipline due to a remarkable decline of the number of species, which gave scientists a good reason to call attention to its conversation *inter alia* for moral reasons. However, Chan (2008) puts forward that biodiversity holding inherent value can be a trade-off to other values that are not in the center of the conservation thought (e.g. equity, justice and autonomy) but are fundamental to human well-being. In the Millennium Ecosystem Assessment (2005) a connection between biodiversity, ecosystems

and their services to living beings is established. These services include: *provisioning services* (such as food, water, timber, and fiber), *regulating services* (that affect climate, floods, disease, wastes, and water quality), *cultural services* (that provide recreational, aesthetic, and spiritual benefits) and *supporting services* (such as soil formation, photosynthesis, and nutrient cycling) (MA, 2003); these services directly affect human well-being.

3.3 The link between ecosystem services and instrumental / intrinsic values

Through this link between biodiversity and ecosystem services being conducive to human well-being the perspective on biodiversity diversifies from a mere inherent value to another form of intrinsic value, *eudaimonistic intrinsic values*. By the means of these values a clear reference can be made to an anthropocentric perspective on the environment and in particular forest values. Entities of eudaimonistic intrinsic value are ends in themselves for human beings, hence are recognized in relation with human interests, appreciations and desires. Entities are not used to satisfy a need but exist and are perceived and experienced as being valuable and non-substitutable, since they are unique in what they are. These values are not absolute and individually valid as is the case with inherent moral values, but exist as point of focus within relations and depend on the interconnectedness in a system. In other words if this entity is isolated from its natural environment, intrinsic value vanishes (Rolston III, 1994). Therefore, eudaimonistic values are a rationale for any anthropocentric justification of wilderness protection (Nelson, 2003). Eudaimonistic values can be attributed to (i) objects, (ii) states, and (iii) activities, in which an object is valued for its own sake, a state of an object is admired or activities are valued for their own sake, e.g. climbing a mountain or watching a sunset. By pointing out on the importance of natural integrity, stability and beauty Aldo Leopold embraces in essence the quality of eudaimonistic intrinsic values contributing to a condition of life flourishing and human well-being. Natural values in the sense of eudaimonistic intrinsic values contribute to both the development and maintenance of capabilities contributing to a *good life*.

While in environmental ethics various value types are allocated to the introduced value categories, a clear distinction of these value types into one specific category is often lacking due to multiple interpretation alternatives. In Table 1 value types are allocated to two

fundamental value categories (A) instrumental values and (B) eudaimonistic intrinsic values and as another reference to the presented ecosystem services.

Table 1 Value categories in relation with value types (adapted from Ott (2003b))

Categories of value →	**A)** anthropocentric **instrumental values** („good" as means for humans); substitutable	**B) eudaimonistic intrinsic values** („good" as ends for humans); non-substitutable
Ecosystem services ↓		
Provisioning service	• Economic Values • Option Values or Insurance Values	
Regulating service	• Life Support Values • Option Values or Insurance Values	
Cultural service	• Social Amenity Values • Recreational Values • Scientific Values • Historical and Cultural-symbolization Values • Transformative Values	• Social Amenity Values • Recreational Values • Scientific Values • Historical and Cultural-symbolization Values • Transformative Values • Religious and Spiritual Values • Aesthetic Values
Supporting service	• Life Support Values	

Box I: Value types

Life support value: The biosystem human beings depend on provides life support values such as fresh air, clean water, photosynthesis etc. (comparable to the definition of resources). While humans develop technologies to resolve dependence on nature, a final disentanglement from nature will never be achievable (Chiesura and de Groot, 2003; Raymond et al., 2009).

Economic value: The rebuild of nature for cultural needs is commercially marketed, while the wealth of natural properties is calculated in monetary terms. Humans derive utility from actual and potential use of natural goods and services.

Option value: Because of its elementary contribution to human well-being, nature provides a sort of insurance for future generations. In addition option values include future values of e.g. biodiversity, of which extent and character are unknown so far (Faith, 2008).

Social amenity value: Nature is perceived as appealing and benefiting surrounding (tangibly and intangibly) (Chiesura and de Groot, 2003; Ní Dhubháin et al., 2009).

Recreational value: Staying in nature enhances regeneration of body and mind and fosters relieve of stress (Chiesura and de Groot, 2003; Ní Dhubháin et al., 2009).

Scientific value: Natural sciences help to learn something about the complexity of the natural environment and its unique parts. Especially in the case of endemic species is the scientific value eminent and lost if the environment is irrevocably transformed.

Historical and cultural-symbolization value: Cultural symbols portray the image of wildlife and wild flora often to demonstrate charisma and power.

Transformative value: Nature serves as source of inspiration in value formation (correspondingly to the idea of weak anthropocentrism) (Norton, 2003).

Aesthetic value: Nature is beauty in life and landscape and evokes an authentic sense of awe and aesthetic appreciation (Rolston III, 1994).

Religious and spiritual value: These natural values are expressed through e.g. the designation of sacred species and places and serve as orientation for social rules concerning uses and behavior, worship, ritual honors and propitiation of spirits. They thus hold socio-cultural identity of people (MA, 2003).

All these value types have a share in vital aspects of a *good life* and go beyond the mere provision of services used by humans as an instrument to fulfill an end. In particular the table shows a particular coherence between eudaimonistic values and cultural/spiritual services of nature.

4 Local people's perception of forest values

"The Creator asked the Malagasy whether they preferred
to die the way a banana plant dies or the way the moon dies.
The Malagasy chose the banana plant because after it dies
many new banana plants will still grow from its base.
But when the moon dies it leaves no children behind."

(Keller, 2009)

Going to the Malagasy forest and experiencing its beauty astonishes most visitors of the island. This nature carries unique sets of ecological systems, which have evolved independently from ecosystems of the African and Asian continent due to the island's separation 150 and 90 Million years ago respectively. This is certainly a perspective from outsiders. When asking local people how they value the forests, answers differ and describe a by far more interrelated relationship (interdependence) between human and nature. "The state of the environment has great impacts on human life." (quote local villager 13:14), "A good environmental condition increases life expectancy." (quote local villager 13:16) and "human health needs nature." (quote local villager 38:37). All these statements reveal our dependence on nature and demonstrate local villagers' consciousness on that reliance. In other words a human-being flourishes as long as he/she lives in a healthy environment, which represents a naturalistic way of understanding human well-being. Human is nature says a local resident: "Personally, I consider nature as (part of) myself; I constantly try to convince my children and grand-children not to kill animals, even frogs and not to destroy our natural environment, except for fundamental needs. To me, humans, animals and the forest are unique and mutually dependant as part of one sole entity." (43:23). Children are central in Malagasy society and symbolize continuity. While today in Madagascar academic education is compulsory at least till the age of 14, village people make sure to transmit worldly wisdom via generations through stories, proverbs and poems in order to help for a better understanding of life and both its constitutive and destructive forces. These stories often relate to the environment, which is full of insights that help to get a better sense of life. Hence, these Malagasy insights describe an existence of natural values in their own right (are not subjectively attributed) and that they are the fuel of life. In addition, reinforcing anthropocentrism Malagasy cultural identities are shaped by veneration of ancestors and strong family ties. The spirits of ancestors stay in direct connection with the descendants and thus influence their attitudes and behavior. In rites ancestors are honored and propitiated through the sacrificial offering of for example a zebu (cattle). In many cases mortal remains are buried in tombs that are situated in

particularly designated sites within forests, where only elected persons are allowed to enter. To the Malagasy people ancestors are the invisible root and source of being that have extraordinary power (Cole and Middleton, 2001). It is said people without ancestors lose their social identity, which is if present a positive constituent of well-being.

The interconnectedness of humans and forests is fundamentally present in all answers the people gave on forest values. People in both Mananara-Nord and Sahamalaza Biosphere Reserve discussed and reported on forest values by the means of participatory rural appraisal methods (PRA). Combined with answers from semi-structured interviews we gained a list of values, that all can be assigned to one of the four ecosystem service categories: provisioning, regulating, cultural or supporting services (MA, 2005) (see Table 2).

Table 2 Perceived forest values by local people – an overview of value classification of forest values related to ecosystem services

Ecosystem services	Forest values (local people's perception)
Provisioning Service	Wood (house construction, carpentry, firewood, paper production, pirogue construction, casket, bridge construction, mortar (for rice) and pestle)
	Food provision for human-beings and animals
	Medicinal plants
	Provision for handcraft / basketry
	Economic value
	Tourism
Regulating Service	Habitat for wild animals
	Protection against erosion
	Protection against heat
	Rain
	Shelter
	Water
Cultural and Spiritual Service	For future generations
	Aesthetic value / decoration / flowers
	Research; education for young generation
	Ownership
	Growth
	Spiritual value

	Human well-being / human-nature interdependence
Supporting Service	Purified air
	Improvement of the environmental condition
	Soil fertilization

This table shows a very detailed perspective of rural people on forests and their values, where all categories of ecosystem services are at hand, thus revealing a comprehensive picture of what a forest signifies to the people who were asked. Interestingly, interviewed people are aware of ecological connectivity such as: if forest diminishes, both decreased rainfall and absence of shelter are likely consequences in turn resulting in lower river beds, less water, and soil erosion. Important forest values were related to these ecological functions that are in turn central to human well-being. Yet, it is unclear whether people were aware about these facts before the establishment of the biosphere reserve or if it is due to awareness raising activities. As presented in the chapter on value categories these regulating and supporting services form part of the instrumental value category. While their function certainly contributes to a good life, it is still the function that is under consideration and therefore these values are not understood as eudaimonistic intrinsic values.

Provisioning services represent one of the major values to local people, which is apparent in their direct dependence on the supply of wood, plants and other resources of the forest. Again interviewees often speak about their use of wood and plants to support their livelihoods and demonstrate the link between forests and human well-being. Yet, these values can also be linked to the instrumental value category, since they are used as means to fulfill an end and are theoretically substitutable. However, in Malagasy reality people rely on these goods. Often there are no other equivalents available, only if construction methods change or alternatives for livelihood means are developed or provided.

However, when contrasting the answers with the presented value types of eudaimonistic intrinsic values as defined in the former section, attention is to be drawn to cultural and spiritual ecosystem services. It is evident that **social amenity** and **recreational values** do not appear in the list of mentioned values (see Table 2). Likewise **historical and cultural symbolization values** are not specifically brought up by interviewees. Nevertheless, other studies indicate the existence of cultural symbolization values of forests and specific forest parts (e.g. Feeley-Harnik, 1978). One particular example is the zebu, which is a humped cattle

breed originating in South Asia. The zebu itself is still of great symbolic and practical importance. Zebu ownership is an indication of wealth, honor and power and their sacrifice and exchange is also an essential part of most cultural practices such as marriage, healing, punishment for breaking taboos or customary laws (*dina*), for allegiance building, and communication with the ancestors and most famously for completing funerary rites. Ancestor burial sites in turn are mainly located in forests, hence signifying a forest value to Malagasy people.

Scientific values were mentioned but not in the sense that local people tend to understand research as an intrinsic value, but they recognize the opportunity for outsiders to gather empirical data on endemic species. Hence, these values represent indirect values to local communities, but cannot be identified as eudaimonistic values as they are defined in the previous chapter, whereas endemic species are intrinsically acknowledged. In most cases when local people were asked which plant and which animal they value most, lemurs for animals and precious wood like hazovola, nanto, and rosewood for plants was the answer. People explained their choice as follows: "Lemurs, because they support the regeneration of trees and also because I like hearing them singing." (quotation local resident 10:7) and "Lemurs, because they support the regeneration of plants, by eating the tree's fruits, making kaka, and the grains regrow and the trees regenerate." (quotation local resident 33:4). Concerning the mentioned trees people deem them beautiful to look at; literally: they are beautiful for the eyes" (quotation local resident 6:1). This implies a valuation because of beauty and integrity and thus can be assigned as eudaimonistic value. The **aesthetic value** of natural (endemic) species is evident and can be interpreted as a sort of uniqueness in its existence. Uniqueness also encourages identity and ownership and was mentioned as another value by Malagasy forest people. They refer to pride and identity that is offered by the forest. If the forest is lost, also pride and identity are gone. According to the answers at hand the idea of **transformative values** can be related to growth, which is a natural process happening in every forest. All beings in the forest tend to grow; this is of value and describes the constructive tendency of life. A chef de fokontany (who is the representative of an administrative entity in Madagascar's communes) said: "The most important information I gained [from the biosphere reserve] was that nature is conserved when plants and animals proliferate, especially those which allow our descendants to live with a beautiful nature later on." (quotation chef de fokontany Ambodivoaseva 7:16) Education for younger generation was specifically mentioned, which is on the one hand relevant to transformative values, but

also on the other hand comprises option values to future generations. Generally, the value of the forest to future generations is apparent in various statements, often referred to the forest's provisioning services but also the importance of heritage was indicated: "My life is going to cease soon, but it is essential to conserve the forest so that our descendants inherit the forest." (quotation chef de fokontany Antanambe 38:24). As stated earlier in Malagasy culture descendants play a superior role in social life. Therefore, it can be retained from interviewed people that, if the forest diminishes or people are kept out of the forest an important value is lost to the current and also the future generation. Generally, this idea is represented in **option values**, which are allocated to the instrumental value category. I would argue that in this context to Malagasy people option values form part of eudaimonistic values, since their cultural identity is defined by the well-being of descendants comparable to the central focus on ancestor veneration as described earlier.

The issue of **spiritual natural values** is very complex and difficult to understand for non-Malagasy people. In interviews people were reluctant to talk about spirits that are in relation with natural values. However, it was evident that sacred trees can be found in many villages. They are surrounded by fences and people are not allowed to touch (see Figure 2). Another sacred tree near a village was for example "secured by" a stone, if one wants to approach the tree he/she has to touch the stone before approaching the tree and the same applies when leaving (see also Figure 2). To some extent the power of these sacred objects is considered as inherent value by Malagasy people. Further explanations are presented in the following section.

Figure 2: Sacred tree with stones in front that need to be touched before entering (picture to the left); sacred tree with fence in the village (picture to the right)

5 Local social organization and institutions (customary rules)

People living in a specific context (e.g. in poverty or in privileged conditions) have preferences that are influenced by this context. It appears that an overwhelming plurality of preferences, value-standards, competing interpretations and conflicts must be accepted. Individual preferences are shaped by authenticity, self-esteem, mental maturity and value orientation, while the latter one is also shaped by a societal or external component (O'Riordan, 1973). According to a sociological value realm a "value indicates a standard or code that exerts a normative (controlling) influence on human behavior" (Bengston, 1994: 522) and is normally influenced by the social group one interacts with. Therefore, it is helpful to integrate an obligation- or norm-based concept of value relationships. These might differ between cultures revealingly demonstrated by the example of customary norms of indigenous people who might worship specific sacred places and still tend to use the same natural resources at other locations to satisfy their needs, whereas we consider a particular resource endangered and put it on a red list. The question is on which basis can sustainable development be defined and which elements should be part of a definition. As already mentioned earlier other social systems might tend to not consider economic growth central to a good flourishing life, yet constituting the fundamental basis of mainstream sustainable development.

In Madagascar this value system and local peoples' perception of forest values is influenced by socio-cultural aspects among which are (1) kinship (ancestors and descendants) and their solidarity (*fihavanana*) with each other; (2) social codes (*dina*); (3) taboos (*fady*); (4) traditional leader and in some regions the belief in supernatural and ancestral spirits, briefly introduced in the following.

The Malagasy expression *Fihavanana* encompasses the native concept of kinship, friendship, goodwill between beings, both physical and spiritual. The literal translation is difficult to capture, as the Malagasy culture applies the concept in unique ways. Its origin is havana, meaning kin. It comes from the belief that we are all one blood entailing the idea that the way we treat others will eventually be reflected back to us and that we, therefore, should be proactive about goodwill for the good of the world. *Fihavanana* is not limited to the present but can also be applied to our relationship with the spiritual world. *Fihavanana* or kinship is the intimate relation between the members of a family, extended to a deeper friendship between people of the same community and lastly with people of the same land. In Malagasy, proverb and ritual discourse, there is often a reinforcement of the importance of this kinship.

Dina are traditional (in many cases oral) codes of conduct or pacts that regulate relationships within and between communities. Through the application of *dina* as customary law community behavior and access to resources is guided and controlled (Rakotoson and Tanner 2006). It is also an informal legal mechanism that stipulates fines (called the *vono dina*) in case of rule breaking. In general, in order to establish a legitimate *dina* the majority of the general assembly of village inhabitants needs to agree on its terms. There are several forms of *dina* concerning different areas of life such as to regulate crime, to tie traditional customs with modern law, to interpret contractual relations and to maintain security (Henkels, 2001).

In Malagasy culture taboos called *fady* (or *faly*) regulate life in the community and establish norms for what is prohibited or allowed. Some *fady* refer to places; others can refer to time, agricultural activities, behavior towards elders etc. (Jones et al., 2008; Stifel et al., 2009). "To respect *fady* is to respect world order. *Ota fady*, to break *fady*, is dangerous. You will have *tsiny* [blame] and most probably be hit by *tody*, the retaliating force (…). ... Taboo-breakers are a disgrace to their home and community, as they bring the whole community out of the normal status and into a dangerous position." (Dahl, 1993: 79). People in Madagascar live and think *fady* rather than considering taboos as formulated rules, in other words they are held within their bodys and thus intrinsically govern behaviour (Lambek, 1992).

Traditional leaders ensure the provision of justice in local villages, foster solidarity among the members of the clan, village or commune and assure the transmission of traditions and customs. People are required to accept their authority as long as they live in the same village (Henkels, 2001). The influence of traditional leaders is still significant in many rural places in Madagascar, although existing in distinct forms within individual ethnic groups. Some are organized by independent monarchies (kings), others by traditional priests (*mpisoro*) or lineage heads. For example to the Sakalava ethnic group the king (*ampanjaka*) represents the link between spiritual heaven (god) and material earth (people) and thus his will is respected. Having this function the king is closely connected to royal ancestors who are the most powerful in society (Feeley-Harnik, 1978). Notables, who are the village elders, share their knowledge and views with the leader to support his decision-making, while all procedures follow strict rules.

By reflecting on a multifaceted picture of socio-cultural aspects, it becomes apparent that traditional customs vary from fixed norms as law and order to landmarks and the provision of social identity. They also vary from place to place and are mostly not predicated on

environmental considerations; accordingly, they can be supportive to nature conservation but can also turn against it. It is noticeable that the nomination of protected areas adds another new form of regulation to the already complex governance system at hand let alone the associated access restrictions to forest products rural people rely on.

6 Integrative conservation and sustainable development initiatives

It is the objective of conservation and sustainable development measures such as biosphere reserves and community-based natural resource management to preserve these presented values in coherence with local people.

6.1 Biosphere reserve concept

As stated at the conference of the parties to the Convention on Biological Diversity (CBD) at its fifth meeting, "the ecosystem approach is a strategy for the integrated management of land, water, and living resources that promotes conservation and sustainable use in an equitable way. Thus, the application of the ecosystem approach helps to reach a balance of the Convention's three objectives: conservation, sustainable use, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources." (UNEP and CBD 2000) In principle, the ecosystem approach needs ongoing adaptation to changing conditions since ecosystems - with their complexity and dynamic nature - seem unpredictable. Above this, there is still a significant lack of knowledge for complete understanding of their functioning. The implementation of the CBD supposes the involvement of all sectors of society in the conservation of biological diversity and sustainable resource use (UNESCO, 2000). One approach that seeks to achieve the involvement of people is the biosphere reserve concept established by UNESCO's Man and the Biosphere (MAB) Programme. The aim is to reconcile the conservation of biodiversity with sustainable economic development. Biosphere reserves are under sovereign national jurisdiction, yet they share their experience and ideas regionally, nationally, and internationally within the World Network of Biosphere Reserves (Bridgewater, 2002). There are about 562 sites worldwide in 109 countries (UNESCO, 2010). The biosphere reserve concept combines participatory management requirements and a zoning scheme with a research-oriented world network (Batisse, 1997; Chape et al., 2003). It constitutes a set of trans-sectional natural landscapes and ecosystems, many closely

intertwined with human settlements and forms of use. Biosphere reserves are "experimental places and vanguards for sustainable development", as declared in the Seville Strategy (UNESCO, 1996), one of the key documents of the concept that frames the role of and vision for biosphere reserves in the 21st century. Biosphere reserves have three inter-connected functions:

- Conservation: landscapes, ecosystems, species, and genetic variation
- Development: economic, human, and culturally adapted
- Logistic support: research, monitoring, environmental education and training

Theoretically, by combining these three functions biosphere reserves can be considered as model regions for the implementation of the CBD's ecosystem approach (Bridgewater, 2001; UNESCO, 2000).

In order to implement the three-fold functions, biosphere reserves ideally consist of three interrelated zones: the core, buffer, and transition zone. The conservation efforts inside the core zone (CZ) together with developmental activities in the buffer and transition zones are supposed to build up the necessary acceptance and consequently the aspired-to support of local populations living adjacent to the CZ of the biosphere reserve. In addition, the formal existence of the World Network of Biosphere Reserves (WNBR), constituted by regional sub-networks and national networks, ought to help countries to exchange information about conservation, developmental activities, and experiences within a neutral, culturally adapted setting (Bridgewater, 2001). On the third World Congress of Biosphere Reserves (March 2008) in Madrid, the necessity for a "clearing house mechanism[2]" was highlighted. This tool should support communication and knowledge exchange between biosphere reserves and the scientific community. Three biosphere reserves are nominated in Madagascar of which the Mananara-Nord Biosphere Reserve is the oldest declared in 1990 and Sahamalaza Iles Radama Biosphere Reserve received its status more recently in 2001.

6.2 Community-based natural resource management

Another integrative management approach are Integrated Conservation and Development Projects (so-called ICDPs) that have been applied a various sites in Madagascar since the end

[2] Originally promoted by the Convention on Biological Diversity and now being adapted to the requirements of the World Network of Biosphere Reserves by UNESCO: www.cbd.int/chm/

of 1980s (Gezon, 1997). Their initial goal was to support nature conservation through socio-economic development of rural areas in buffer zones around protected areas (Wells et al., 1992). Unfortunately, this goal has not been achieved in most cases, because people still used natural resources inside park boundaries or the people did not understand that the development programs they received were closely linked to the purpose of conservation (Robinson, 1993; Vandergeest, 1996). Community-based natural resource management (CBNRM) should establish responsibility and understanding with local people and sensitize for the value of conservation (Wainwright and Wehrmeyer, 1998). Still livelihood concerns are considered, though in a different way. People receive the formal right to use resources in certain areas for their own purpose. However, the question remains how the people can make use of the adjudicated resources so that livelihood quality improves? As Salafsky and Wollenberg (2000) articulate clearly "to having at least moderate linkage between the biodiversity and the livelihood activity, the strategy also requires that the project generates cash and noncash benefits for the stakeholders and that the stakeholders have the capacity to take action to mitigate internal and external threats" (Salafsky and Wollenberg, 2000: 1435). In Madagascar areas declared for community-based natural resource management are often located around protected areas and in the case of the two case study biosphere reserves function as green belt around the core zone (i.e. a buffer zone).

6.3 Combination CBNRM-model with local socio-cultural identities

Community-based natural resource management (CBNRM) should establish responsibility and understanding with local people and sensitize for the value of conservation (Wainwright and Wehrmeyer, 1998) as introduced in section 6.2. In Madagascar in 1996, the first law on the co-management of natural resources came into force, the "*GEstion Local des Ressources Naturelles Renoubable SEcuriée*" (GELOSE). It is applicable to all natural resources and aims at better environmental stewardship through the set-up of local management entities, institutions and empowerment. Central element of GELOSE is the creation of negotiated contracts between the state (the forest authority), the municipality (e.g. the mayor), and a voluntary association of community residents, the so called *Communauté (locale) de Base* (CLB) that is created for this purpose (Antona et al., 2002). For forests, a special legislation was defined, the Contractual Forest Management (GCF). The GCF process is a simplified

alternative for the transfer of forest management rights to local user groups, here called COBA (Kull, 2002; Raik and Decker, 2007).

Currently, more than 450 GCF and GELOSE contracts have been signed throughout Madagascar (GTZ and MEEFT, 2008; Raik and Decker, 2007). Often conservation and development organizations play a central role in designing management plans, zoning the areas and in giving technical support to the COBA/CLB. The effort to decentralize forest management in Madagascar has transferred some powers to local people, while maintaining a certain level of centralized control (Sarrasin, 2009). Although people receive the formal right to use resources in certain areas for their own purpose, the question remains how they can make use of the adjudicated resources so that livelihood quality improves? As Salafsky and Wollenberg (2000) articulate clearly, "to having at least moderate linkage between the biodiversity and the livelihood activity, the strategy also requires that the project generates cash and noncash benefits for the stakeholders and that the stakeholders have the capacity to take action to mitigate internal and external threats" (Salafsky and Wollenberg, 2000: 1435).

Four of the formal criteria of the management transfer to local communities are listed in Table 3 (following Pollini, in prep.), contrasted with both the local socio-cultural aspects introduced in section 5 and the still high profile of conservation organizations revealing (i) the discrepancy between intention and actual impact, (ii) the power, profile, and dominant narratives of conservation organizations, and (iii) the incompatibility of socio-cultural aspects and nature conservation as defined by the international community.

Table 3: CBNRM principles in contrast with socio-cultural aspects

Principles of CBNRM in Madagascar	**Controversy with local socio-cultural aspects (examples) and the remaining high profile of conservation organisations in the process**
1. Contract between two (for GCF) or three parties (for GELOSE); generally between forest administration and local association representative	Where *fihavanana* acts as a significant force regulating the social order a contract between local associations and the forest ministry may potentially fail in conflict situations in which people may behave according to their social affiliation, rather than in terms of delivery of the laws or rules of the contract. This is exemplified by the following proverb: "*Aleo very tsikalakalam-karena toy izay very tsikalakalam-pihavanana*" (Better to lose some material wealth than losing the relationship with kin or friends) (Rafolisy, 2008) rather than obeying the contract. The make-up of the contract strongly bears the hallmarks of conservation organizations including management plans etc. that are

	difficult to understand for most rural people (Pollini, in prep.).
2. Creation of new institutions – local associations (abbreviated V.O.I. or in particular: COBA for GCF and CLB for GELOSE[3])	Local social structures are strongly influenced by family, lineage, clan and descent status (noble, free, slave) and thus may influence the membership and structure of the newly established association; access for people of marginal groups can be more difficult (Bertrand, 1999). Through the establishment of new associations specifically designed for the management transfer further social structures are added to traditional ones adding to complexity (Pollini, in prep.) and potentially reinforcing or subverting power dynamics, and ability to access resources.
3. Establishment of community rules (new *dina*)	While new *dina* are designed to fit the requirement of local management of natural resources, their legitimacy varies, since they are (1) created on the initiative of outsiders and (2) required to conform to state defined constitutional, legislative and regulatory dispositions, therefore, allowing relatively little room for negotiations as to their substance. Furthermore, the contents of GCF/GELOSE type *dina* need to be formally approved by the mayor, which may disempower the recognised clan leaders from their traditional role (Henkels, 2001; Kull, 2002). Furthermore, Evers at al. (2006) highlight that new rules "forced the local population to view surrounding forest in a different way" (Evers et al., 2006: 6), exploitation is strictly regulated and *tavy* is completely banned contradicting cultural habits of a number of Malagasy ethnic groups (Muttenzer, 2010).
4. Existence of an Environmental mediator: A specialised person who is in charge with consulting and support	In many cases the mediator is not a local person and is hired from a state-certified pool of specially-trained professionals (Kull, 2002)) and is often a representative of a conservation unit as it is the case e.g. in Mananara-Nord Biosphere Reserve, where Madagascar National Parks (ANGAP-UE/IC, 2007) and in Sahamalaza Biosphere Reserve SAGE (environmental management service) (ANGAP and MEEFT, 2008) assume this role with efforts to convince people and raise awareness as it is their task in protected area management rather than performing their assignment as independent mediator (Fritz-Vietta et al., 2009).

Again although intended to allow for participation and empowerment, community-based natural resource management remains in the hands of outsiders, local people stay in their role as passive recipients of project activities (Leach et al., 1999) and their perspective and socio-

[3] V.O.I.: *Vondron'Olona Ifotony* (local institution); COBA: Communauté de Base; CLB: Communauté Locale de Base.

cultural background collides in many regards with the applied concept. In this context local people ask about the true intentions of foreign entities for their interest in Malagasy biodiversity, yet increasing the fear to lose common access to natural resources (Evers et al., 2006; Pollini, in prep.; Simsik, 2004).

6.4 Implementation in the biosphere reserves

Both Biosphere Reserves in Mananara-Nord and Sahamalaza have placed an emphasis on grouping of local people in thematic associations as new forms of alliances and means for information exchange and implementation of various activities. Such associations include COBAs (for forest management under GELOSE or GCF), FRAM (associations of school pupils parents), Slow Food (for producing eco-labeled organic vanilla), SPORTIV (sports associations), reforestation and tree nursery associations, dam associations, fishermen's associations to name but a few. The idea is to initiate activities, raise awareness and organize capacity building. In interviews local people often supported the idea of associations and are willing to participate; since their hope is to learn from each other as well as to receive financial support through micro-project funding and training. This approach is interesting in face of policy development, since people with common concerns are brought together allowing for the formation of a collective voice. However, to the rural people concerned it is a new form of social organization, and therefore often suffers from lack of its own socio-organizational capacity. Furthermore, classical hierarchies within communities according to clan-leadership may still pervade and undermine respect for and deeper commitment to such new organizations. Also very significantly, people are often reluctant to cooperate in such newly established systems because such forms of externally introduced cooperation are not in peoples habits. Skepticism or even anxiety by local people towards the external initiators often shapes this reluctance. Another impediment to the introduction of new social organizations is the fact that many different interventions have led to the establishment of numerous associations. The proliferation of multiple local associations puts a strain on participants' availability and confidence in them is often sapped by perceived and experienced inefficiency, and inadequate delivery of desired and promised outcomes. Local people are often keen to participate in organizations which strive to tackle issues of importance to them, but as described above the constraints of time, lack of evidence of tangible results and low levels of confidence in the effectiveness of such externally imposed cooperative working all

limit the commitment which is actually made by communities to new associations. Practical responses to these challenges of many levels of new social organization have been made, for example in the Sahamalaza Biosphere Reserve the management body, Madagascar National Parks with the help of other non-governmental organizations and local authorities have built up a coordination platform to facilitate cooperation and communication between the multiple groups and associations. This platform functions as an umbrella organization facilitating information exchange, training and the coordination of activities. In the Sahamalaza Biosphere Reserve six Structures are officially recognized by the communes. In spite of the aforementioned challenges, local associations remain an important mechanism helping to organize and group local people and give them mandated bodies with the potential to better engage in forms of policy design.

7 From environmental ethics to local perceptions and customary institutions

The Earth is remarkable, and valuable,
for both the nature and the culture
that occur on it.

(Rolston III, 1994)

Brannan and Lo (2009) introduce environmental ethics as a discipline that "… provide(s) moral grounds for social policies aimed at protecting the earth's environment and remedying environmental degradation". Interestingly enough a focus is put on social policies, which implies human values such as justice, equity and autonomy are very relevant in this respect. Environmental ethics provide ground for regulation but are also intended to build up environmental conscience and for the determination of natural values.

Malagasy society has certainly a different background to industrialized countries and especially in rural areas life concepts differ exceptionally from western ones. However, with regard to policies and especially conservation policies Madagascar's politics are clearly influenced by the international community. Therefore, we argue in this paper that conservation and sustainable development policies need to take into consideration the particular circumstances that happen to organize social life in Madagascar. We also argue that international organizations and governments involved in policy making processes need to loosen their own ideas and interests. Environmental ethics provide a certain ground to this

argument from a different angle in contemplating fundamental ideas at hand and allowing for a sincere evaluation of nature-culture interrelations in order to render context-sensitive environmental policy making possible.

Fundamental work has been accomplished at the conceptional level and considerable changes have been triggered in environmental and sustainable development policies. However, these contemplations are fed by western ideology and it seems difficult to detach moral concepts from it. But despite the multitude of moral concepts that exist around the world, the common ground of all societies is the existence of values that constitute norms and moral principles.

Axiology is the philosophical study of values, which is also an important component of environmental ethics. In particular natural values (including all living beings thus from a non-anthropocentric perspective) are under consideration and have been elucidated and systemized. In the present paper a number of value categories are introduced and systematically detailed based on literature at hand. In the following for the purpose of this paper *eudaimonistic intrinsic* values are highlighted. They are relevant to the subject matter due to a number of qualities they hold:

1. they are difficult (if not impossible) to measure in monetary terms in contrast to instrumental values and are non-substitutable;
2. they represent a value category that is underrepresented but considered crucial in environmental decision-making;
3. they refer to cultural and spiritual ecosystem services, which lack investigation and delineation so that these services can gain sufficient recognition in environmental decision-making;
4. they refer to Martha Nussbaum's capabilities approach, a theoretical concept of indicators relevant for a good life apart from economic terms and thus is pertinent to the context in Madagascar.

Economic valuation of natural resources, biodiversity and nature as a whole has been one approach to stress the necessity to conserve nature. For example one attempt was to evaluate biodiversity through calculating the value of individual ecosystem services e.g. by Costanza et al. (1997). Fundamental basis is the utilitarian thought of human welfare, which considers nature from a totally anthropocentric perspective as means to an end for human being welfare. A very recent approach are payments for environmental services (PES) where local people receive a payment if they conserve natural resources, i.e. forests or marine resources (Milder

et al., 2010; Sommerville et al., 2009). This sort of benefit sharing is widely acknowledged and promoted (Bayon and Jenkins, 2010), although implementation is in its infancy and holds a wide range of challenges. One of the major challenges is the local context in which these theoretically sophisticated concepts do not fit in.

The concept of ecosystem services composes four service categories: a) provisioning, b) regulating, c) cultural and spiritual as well as d) supporting services. Categories a), b) and d) can be attributed to the instrumental value category, where natural values constitute an important means to an end, here facilitation of life. While services of category c) remain difficult to be determined on a conceptual level, because of their variability from place to place even within one country like Madagascar, they comprise an essential part of social life forms and are often pivotal to the success or failure of conservation policies and natural resource management. Table 1 shows that value types of eudaimonistic intrinsic value explicitly constitute the category of cultural and spiritual services and therefore require further elucidation.

Another argument why eudaimonistic intrinsic values are helpful as point of reference is their involvement in human well-being. Forest people in Madagascar live in close relation with their forests and in interviews consistently referred to the interrelation between natural and human health. According to the interviewees' believes forests comprise major components that contribute to a better life: health, education, growth, sense of ownership, and spiritual connection. Nussbaum (2007) addresses a number of human rights challenges that also involve natural resources and access to them. She argues that children should grow up with a decent set of opportunities for education, healthcare, bodily integrity, political participation, choice and practical reason. At the same time she speaks of treating nonhuman animals decently and protecting their habitats. Hence, the development of human rights for human well-being on the one hand and the conservation of natural values on the other hand are closely interconnected.

Principally, eudaimonistic intrinsic values reflect peoples' identities and sense of life. In this paper they were contrasted with value perceptions of forest people to highlight their role in the individual value system of the people. The general value types presented in section 3.1 can be attributed to the statements of the people (see Table 4 in Annex). An overview of value categories perceived by local people assigned to cultural and spiritual services on the left are contrasted with eudaimonistic value types on the right in Figure 3.

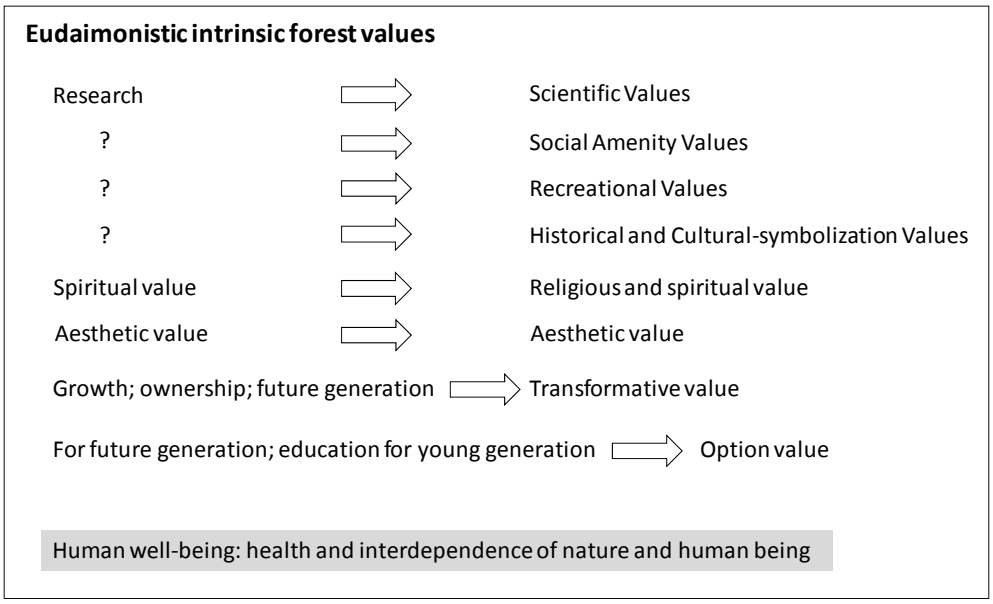

Figure 3: Eudaimonistic intrinsic forest values

Following remarks have to be noted:

1. Research is not perceived as direct value, rather as value to attract foreign researchers;
2. Social amenity, recreational as well as historical and cultural-symbolization values were not mentioned by local people and are therefore marked with a questionmark;
3. Spiritual and aesthetic values are within the scope of the general definition;
4. Growth, ownership and future generation can be understood as transformative value but require a broader definition (suggested addition in *italic*): "Nature serves as source of inspiration in value formation *through transformation and development (in terms of change, due to the natural process of change happening in forest ecosystems and social changes that imply new ideas of ownership and so forth; in this context social and natural processes of change are reciprocal).*
5. For future generation and for education of the young generation can be understood as option values; these option values are identified as eudaimonistic intrinsic value to Malagasy people, since their life concept is built on descendants and the descendants' flourishing and well-being. The suggested new definition is (addition in *italic*): "Because of its elementary contribution to human well-being nature provides a sort of insurance *and also life identity* for future generations *which is a fundamental aspiration of the current generation*. In addition option values include future values of e.g. biodiversity, of which both extent and character are unknown so far."

With the approach in this paper a consolidation of environmental ethics and the argumentation and definition of value types according to axiological reflections with local people's perception is presented, although social sciences has a different approach to the question of environmental values. In social science empirical data is used to identify value perceptions emanating from people's conceptions and affections. It is recognized that a person's value system is shaped by both social and personal identity. The capability to acknowledge value is determined by a person's perception and depends on the context he/she experiences the object of value (Rokeach, 1968).

These value perceptions reflect a subjectivist position on values and reveal personal horizons in the process of value determination. However, we consider it crucial to include both perspectives in the process of environmental decision making. On the one hand the meta-level in environmental ethics provides important fundamental ideas and principles for conservation policies, which on the other hand need to be related to the situational context, in order to guarantee context specificity. To this end the stream *environmental pragmatism* was established through integrating the individual context, plurality and complexity of interrelations into the ethical debate. An exemplification by means of particular concrete situations is meant to facilitate specific practicable recommendations for further action (Palmer, 2003).

The situation in Madagascar highlights conditions that are far from global debates. People living in rural areas adapted their lives to these conditions over a long period of time from a very practical point of view on living habits but also in terms of cultural identity. Due to lacking infrastructure rural areas are far off the political centre of the country and people living in these areas thus developed their own rules as demonstrated by the various customary rules that regulate land use systems as presented in this chapter. Hence, Malagasy rural people base their idea and identity on traditions and belief systems that have been evolving from close interdependence with their environment. Their understanding of natural processes is complex, incorporated in narratives, and often explained by spiritual incidents, in other words closely interconnected with their cultural system. While this does not imply a per se favorable behavior towards nature, it demonstrates a particular sensitivity of ecological processes that is part of customary rules.

In terms of the goal to identify ways and concepts of sustainability transferable to the described circumstances, local value systems cannot be neglected, if a development is to

occur in the South going hand in hand with local needs to fulfill a good life. Different priorities in life concepts are prevalent and should be taken into account. As Evans highlights (2002) the goal must be to enable the less privileged to develop their own distinctive preferences and priorities based on their shared economic positions and life circumstances, and to develop shared strategies for pursuing those preferences. This might at first sight seem far from a meta-level or theoretical considerations but there are principles contained that can certainly contribute relevant ideas into concepts.

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Annex

Table 4: Value categories, local people's forest value perception and ecosystem serives

Categories of value → **Ecosystem services ↓**	**A)** anthropocentric **instrumental values** ("good" as means for humans); substitutable	**B) eudaimonistic intrinsic values** ("good" as ends for humans); non-substitutable	**C) forest values local people's perception**
Provisioning service	• Economic Values • Option Values or Insurance Values		• Wood (house construction, carpentry, firewood, casket, paper production, pirogue and bridge construction, mortar (for rice) and pestle) • Food provision for human-beings and animals • Medicinal plants • Provision for handcraft / basketry • Economic value • Tourism
Regulating service	• Life Support Values • Option Values or Insurance Values		• Habitat for wild animals • Protection against erosion • Protection against heat • Rain • Water • Shelter
Cultural service	• Social Amenity Values • Recreational Values • Scientific Values • Historical and Cultural-symbolization Values • Transformative Values	• Social Amenity Values • Recreational Values • Scientific Values • Historical and Cultural-symbolization Values • Transformative Values • Religious and Spiritual Values • Aesthetic Values	• For future generations • Aesthetic value / decoration / flowers • Research; education for young generation • Ownership • Growth • Spiritual value • Human well-being / human-nature interdependence
Supporting service	• Life Support Values		• Purified air • Improvement of the environmental condition • Soil fertilization